

REMARKS

In response to the non-final Official Action currently outstanding with respect to the above-identified application, Applicants respectfully request that the subject application be amended as set forth hereinabove.

Claims 1-24 were pending at the time of the issuance of the currently outstanding Official Action. By the foregoing Amendment Applicants have amended Claims 1, 2, 12, 13, 14, 16, 17, 18, 20, 22, 23 and 24. Claims 25-33 have been added, and no claims have been added. Accordingly, upon the entry of the foregoing amendment, the claims remaining under active prosecution in this application will be Claims 1-33. The text of the claims along with an appropriate indicator of the status of each is set forth hereinabove as required by the Rules.

In the currently outstanding Official Action, the Examiner has:

- 1/ Failed to acknowledge Applicants' claim for foreign priority under 35 USC 119(a)-(d) or (f), and to confirm the receipt of the required copies of the priority documents by the United States Patent and Trademark Office. ***Appropriate acknowledgement and confirmation of these filings in response to this communication are respectfully requested;***
2. Failed to indicate whether or not the drawings as filed on August 8, 2001 as part of this application is acceptable. ***An indication concerning the acceptability of the drawings currently on file in this application in response to this communication is respectfully requested;***

3. Provided Applicants with a copy of a Notice of References cited (Form PTO-892) along with copies of each of the newly cited references;
4. Failed to provide Applicants with a copy of the Form PTO-1449 that accompanied their Information Disclosure Statement of 14 October 2003 in the above-identified application duly signed, dated and initialed by the Examiner to confirm his consideration of the art listed therein.
Appropriate acknowledgement of Applicants' Information Disclosure Statement of 14 October 2003 in response to this communication is respectfully requested;
5. Objected to the Title of the Invention on the basis that it is not sufficiently descriptive of the invention being claimed, and required Applicants to provide a new Title of the Invention;
6. Rejected Claims 2 and 16 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention;
7. Rejected Claims 1, 3, 7, 8 and 10-13 under 35 USC 102(e) as being anticipated by the Yamazaki reference (U.S. Patent No. 6,522,319);
8. Rejected claims 2, 14 and 15 under 35 USC 103(a) as being unpatentable over the Yamazaki reference; and
9. Rejected claims 4-6, 9 and 16-24 under 35 USC 103(a) as being unpatentable over the Yamazaki reference in view of the Proebsting reference (U.S. Patent No. 6,064,250).

No further comment is deemed necessary in these Remarks regarding items 1-4 above.

With respect to item 5, Applicants have hereinabove amended the Title of the Invention in a manner that follows the Examiner's suggestion and that is respectfully submitted to be appropriately descriptive of the subject matter being claimed. A decision accepting the new Title of the Invention supplied by this amendment is respectfully requested in response to this communication.

With respect to item 6, the Examiner has rejected Claims 2 and 16 as being insufficiently clear and definite. Specifically, the Examiner suggests that Claim 2, final paragraph, is unclear on the basis that the relationship of the frequency to the operational current is unclear, and also on the basis that the "elements" of the power supply lack the required antecedent basis in the claims. As to Claim 16, the Examiner suggests that the use of the term "drop margin" is both unclear and lacks appropriate antecedent basis. By the foregoing Amendment, Applicants have addressed these issues in a manner that Applicants respectfully submits remove the bases for the Examiner's rejections under 35 USC 112 (while at the same time clarifying the grammar of several of the others of the claims).

Specifically, with regard to Claim 2, it now has been made abundantly clear that the frequency of pump operation as activated by the control means is established according to the maximum value of the operating current values of the drivers. It also is clarified that the power supply provides high conversion efficiency at the frequency so established.

Similarly, with respect to Claim 16, despite the fact that the Examiner apparently had little, if any, difficulty understanding Applicants' use of the term "drop margin" in his rejection of that claim, Applicants nevertheless in the interest of advancing this prosecution, have amended Claim 16 so as to delete the term "drop margin" and substitute the definition thereof, i.e., "decrease in the output voltage value of the power supply present when pump operation is resumed at the time of switch from the hold mode to the scanning mode".

Withdrawal of the currently outstanding rejections under 35 USC 112 in view of the foregoing amendment is respectfully submitted to be warranted, and is respectfully requested.

With respect to the Examiner's substantive rejections, items 7-9 above, Applicants note that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or impliedly, in a single prior art reference. On the other hand, a claim is obvious within the meaning of 35 USC 103(a) when (1) there is a suggestion or motivation to modify the teachings of the cited references in the references themselves or in the knowledge generally available to those skilled in the art, (2) when there is a reasonable expectation of the success of such a combination, and (3) the cited prior art teaches or suggests all of the claimed limitations, it being assumed that the teaching or suggestion of the combination and the reasonable expectation of success are not derived from the applicants' specification.

Applicants respectfully submit that independent Claims 1 and 13 (and hence the claims that depend thereon as well) clearly define over the Yamazaki reference with respect to whether or not charge-pump operation is inactive or not during the hold mode. Further, Applicants respectfully submit that independent Claims 14 and 24 (and the claims that depend thereon as well) also define over the cited references in that each of those claims comprises a smoothing capacitor.

More specifically, the invention as set forth in Claims 1 and 13 of the present invention changes the frequency of pump operation depending upon whether or not the operational mode is in the scan or the hold mode. For example, as discussed at page 18, line 19 to page 19, line 2 of the present specification, the charge-pump power supply operates even in the hold mode at a lower frequency than in the scanning mode. This suppresses a voltage drop in the hold mode such that less power is consumed in the hold mode than in the scanning mode. These features are not found in the Yamazaki reference.

The invention as presently claimed in Claims 14 and 24, on the other hand, comprises a smoothing capacitor. With this smoothing capacitor, an output voltage value can be maintained even in the hold mode. In contrast, however, in the Yamazaki reference, the operation of the charge-pump circuit is stopped (See, Claim 18 and Column 31, lines 49-63 of the Yamazaki reference). Hence, the Yamazaki reference is totally silent concerning the operation of the charge-pump circuit at low frequency and as to the provision of a smoothing capacitor in order to supply a non-scanning voltage in the hold mode (See, page 14, lines 1-10 of the present specification).

The present invention also differs from the Yamazaki reference with respect to the definition of the scanning mode itself, and as to whether or not the vertical synchronization period is extended. More particularly, it will be understood that the object of the Yamazaki reference (unlike that of the present invention) is to provide an electrooptical apparatus that does not allow a driving-voltage forming circuit to become complicated for the partial display function therein desired. Instead, Yamazaki allows the size and position of his partial display to be determined by software in a manner that he believes to improve the general usability of his apparatus (See, Yamazaki at Column 6, lines 32-40).

Still further, as described at Yamazaki, Column 18, lines 29-40 in conjunction with his Fig. 3, it will be seen that only some of the scanning electrodes (i.e., only Y1-Y40 in Y1-Y200 in Fig. 3) are scanned during one vertical scanning period (designated 200H). In contrast, in the image display device of the present invention the hold mode is inserted into the scanning mode (which is an operational mode under normal driving conditions) so as to increase the length of the vertical scanning period relative to its length under normal scanning conditions so as to thereby scan the entire screen.

To further specify these differences between the present invention and the Yamazaki reference (which were previously inherent therein), Applicants have added Claims 25-33 by the foregoing Amendment. Thus, New Claims 25-28 depend from independent Claims 1, 13, 14 and 24 respectively and specify that when power is to be reduced, the vertical scanning period is increased so as to be longer than normal. Also, Claims 29-32 depend from independent Claims 1, 13, 14 and 24 respectively and specify that the hold mode be inserted in the normal scanning mode so as to increase the vertical scanning period to be longer than normal. (See, the present specification at page 4, line 24 to page 5, line 6, and page 28, lines 10-17)

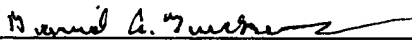
New Claim 33, on the other hand, specifically includes the relationship of the capacitances to the maximum value of the operating current and the frequency of pump operation, and the relationship of the frequency to the capacitance and resistance of the CR oscillator. (See, the present specification at page 20, lines 8-14, and page 23, lines 6-16)

Applicants respectfully submit that the foregoing Amendment and discussion clarifies and distinctly indicates features of the present invention inherent in the claims as filed which are not disclosed, taught or suggested by the references cited and applied by the Examiner in the currently outstanding Official Action. Therefore, for each and all of the foregoing reasons and in light of the foregoing Amendment, Applicants respectfully submit that the Examiner's currently outstanding rejections of the claims of this application should be withdrawn and that this application now is in condition for allowance. A decision so holding and allowing Claims 1-33 as hereinabove amended in response to this communication, therefore, is respectfully requested.

Applicants also believe that additional fees beyond those submitted herewith are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. **04-1105**, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

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David A. Tucker
Reg. No. 27,840

Edwards & Angell, LLP
P.O. Box 9169
Boston, MA 02209-4280
(617) 517-5508

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